EXHIBIT D49

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

ILLUMINA, INC., ILLUMINA CAMBRIDGE LTD., Plaintiffs, vs. BGI GENOMICS CO., LTD., BGI AMERICAS CORP., MGI TECH CO., LTD., MGI AMERICAS, INC. And COMPLETE GENOMICS, INC., Defendants.	Case No. 3:19-cv-03770-WHO 3:20-cv-01465-WHO

CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

UNDER THE PROTECTIVE ORDER

REMOTE VIDEOCONFERENCE, VIDEO-RECORDED DEPOSITION OF

MARK VAN OENE

Thursday, April 9, 2020

San Diego, California

Reported By:

Hanna Kim, CLR, CSR No. 13083

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

ILLUMINA, INC., ILLUMINA CAMBRIDGE LTD.,	)	
Plaintiffs,	)	Case No.
vs.	)	3:19-cv-03770-WHO
BGI GENOMICS CO., LTD., BGI AMERICAS CORP., MGI TECH CO., LTD., MGI AMERICAS, INC. And COMPLETE GENOMICS, INC.,	)	3:20-cv-01465-WHO
Defendants.	)	

CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY UNDER THE PROTECTIVE ORDER,

remote videoconference and video-recorded deposition of MARK VAN OENE, taken under the stipulations of Counsel thereof, before Hanna Kim, CLR, Certified Shorthand Reporter, No. 13083.

A P P E A R A N C E S:

For Plaintiffs:

WEIL, GOTSHAL & MANGES LLP
BY: DOUG McCLELLAN, ESQ.
(Appearing by Videoconference)
700 Louisiana, Suite 1700
Houston, Texas 77002-2784
713.546.5313
doug.mcclellan@weil.com

For Defendants:

ARNOLD & PORTER KAYE SCHOLER LLP
BY: KATIE J.L. SCOTT, ESQ.
(Appearing by Videoconference)
3000 El Camino Real
Building 5, Suite 500
Palo Alto, California 94306
Telephone: 650.319.4500
katie.scott@arnoldporter.com

APPEARANCES: (CONTINUED)

For Defendants:

ARNOLD & PORTER KAYE SCHOLER LLP
BY: NEDA DADPEY, ESQ.
(Appearing by Videoconference)
250 West 55th Street
New York, New York 10019-9710
212.836.8000
neda.dadpey@arnoldporter.com

Also Present:

ROLAND SCHWILLINSKI, ESQ., Illumina
(Appearing by Videoconference)
DOUGLAS SMITH, Arnold & Porter
(Appearing by Videoconference)
DAVID MANZO, Videographer
(Appearing by Videoconference)

INDEX OF EXAMINATION

WITNESS: MARK VAN OENE

(Appearing by videoconference)

INDEX OF EXHIBITS

INDEX OF EXHIBITS (CONTINUED)

///

///

INDEX OF EXHIBITS (CONTINUED)

INDEX OF EXHIBITS (CONTINUED)

///

///

INDEX OF EXHIBITS (CONTINUED)

///

///

///

INDEX OF EXHIBITS (CONTINUED)

///

INDEX OF EXHIBITS (CONTINUED)

///

///

///

INDEX OF EXHIBITS (CONTINUED)

--oOo--

San Diego, California

Thursday, April 9, 2020; 8:32 a.m.

08:32:38 --oOo--

08:32:38 THE VIDEOGRAPHER: Here begins Media Unit
08:32:48 Number 1 in the deposition of Mark Van Oene,
08:32:51 testifying in the matter of Illumina, Inc., Illumina
08:32:51 Cambridge, Limited, versus BGI Genomics, Limited,
08:33:05 et al.
08:33:05 Today's date is April 9th, 2020. The time
08:33:10 is 8:33 Pacific Standard Time. The deponent is
08:33:18 being remotely deposed and is located in San Diego,
08:33:23 California.
08:33:23 I'm David Manzo, the videographer, and I'm
08:33:26 remotely recording this deposition from San Jose,
08:33:26 California.
08:33:31 The court reporter is Hanna Kim and is
08:33:33 reporting this deposition from San Francisco,
08:33:36 California.
08:33:37 Would all counsel please identify
08:33:39 yourselves and state whom you represent one at a
08:33:42 time.
08:33:45 MR. McCLELLAN: Go ahead, Katie.
08:33:49 MS. SCOTT: Hello, this is Katie Scott
08:33:52 from Arnold & Porter representing the Defendants.
08:33:57 MR. McCLELLAN: This is Doug McClellan

from Weil, Gotshal & Manges representing Plaintiff Illumina entities. And also on the line is Roland Schwillinski from Illumina.

MS. SCOTT: And I should have added that my colleague, Neda Dadpey, also of Arnold & Porter, is also on the line.

THE VIDEOGRAPHER: Okay. Will the court reporter please remotely swear in the witness.

THE COURT REPORTER: Due to the need for this deposition to take place remotely because of the Government's order for social distancing, the parties have stipulated that the court reporter may swear in the witness over the phone and that the witness has verified that he is in fact Mr. Mark Van Oene.

Sir, I am going to administer the oath to you, so please raise your right hand.

MARK VAN OENE,

having been administered an oath, was examined and testified as follows:

THE VIDEOGRAPHER: Counsel, please proceed.

MS. SCOTT: Thank you.

///

///

that have to play into how you determine the pricing of a product.

Q. Would you consider Illumina to be a relatively data-intensive company?

MR. McCLELLAN: Object to form.

THE WITNESS: Sorry. Did somebody say something?

MR. McCLELLAN: Sorry. I just said "Object to form."

THE COURT REPORTER: And this is the court reporter. I'm going to ask Mr. Van Oene to speak a little louder --

THE WITNESS: Okay.

THE COURT REPORTER: -- and slower. Thank you.

THE WITNESS: I believe we have a lot of data. We're still getting better at how we use that data to make different discoveries or -- or understand things better. But I would say that we do have access to a lot of data, yes.

BY MS. SCOTT:

Q. How does Illumina go about collecting all of that data?

A. Most of it is transactional data, so order history, customer data, call support data. You

know, the analytics I look at are -- are, you know, things that are reflective of our interactions with the customers.

I don't want -- I don't want you to in any way think that we access customer data. We do not. We can -- we can do surveillance and health checks on systems, but we are not accessing genomics or any type of genomics data from those customers. This is really transactional data and market data and -- and informational data.

Q. When you say "transactional data," what is included in that?

A. Most of it is around the orders and order history. So with a customer institution, the key contact that's making the order or the purchase order number, the products, the quantities, the ship schedules, you know, how those ship schedules change over time.

You know, the -- the typical transactional stuff that, you know, if you think of your Amazon ordering, you know, look at your order history; we -- we can look at order history and understand what customers are buying at what price points and what time of year.

Q. And is that information tracked for all

08:43:01 Illumina customers?

08:43:02 A. Yes.

08:43:05 Q. And -- and what is the name of the system

08:43:07 that that information is tracked in?

08:43:09 A. We use SAP.

08:43:11 Q. And is there also data collected about

08:43:19 potential transactions, so before you get to the

08:43:22 point of actually making the sale?

08:43:24 A. Yes. We use SF -- Salesforce.com we use

08:43:29 to track pipeline and -- and customer -- it's a

08:43:31 customer relation management system. So we use that

08:43:34 to track, you know, customer opportunities, when we

08:43:39 think those will close, what products we're

08:43:43 discussing with them.

08:43:44 We also within that will track sort of

08:43:48 health of their systems, uptime of systems, and

08:43:51 understand the different technical support issues

08:43:55 that they have.

08:43:55 So we use it both for sales future

08:43:58 pipeline as well as for tech support and field

08:44:02 support service calls to make sure that everybody

08:44:05 has the information they need for each of those

08:44:06 customers.

08:44:07 Q. And are people in the field, you know,

08:44:13 whether they're sales representatives or -- or other

differentiated?

A. It would depend on the magnitude of that error rate. I would -- I would suggest that Illumina has been so successful because we have the highest accuracy technologies on the market and the lowest error rates on the market.

And so, if it's within -- within small percentages of that, I don't think that's a differentiator. If it's an error rate that's much higher, like Oxford Nanopore --

THE COURT REPORTER: Such as what? If it's an error rate such as --

THE WITNESS: Oxford Nanopore.

BY MS. SCOTT:

Q. In your understanding, is Oxford Nanopore generally known for having higher error rates than Illumina systems?

A. Yes.

Q. And is Oxford Nanopore generally known for having high error rates than MGI Systems?

A. Yes, it's known for having high error rates. It's differentiated because it has extremely long sequence reads. And so their differentiation is not on price or on error, it's on the length of the read.

08:52:53 And so there are different applications you can do, like bacterial sequencing or non-human sequence, that are easier to do with a little bit of Oxford Nanopore than with either Illumina or MGI.

Q. Would it be feasible to use an Oxford Nanopore system for a whole genome sequencing?

A. Feasible, but not affordable.

Q. Are you familiar with the Ion Torrent System?

A. I am.

Q. Is it -- would you consider it feasible for whole genome sequencing?

A. Again, it -- it could be done, but it doesn't have the output or at the price points necessary to -- to have that as a primary application. It's predominantly used in clinical settings for small panel approaches to sequencing.

Q. And what about the Pacific Biosciences system, would that be feasible for whole genome sequencing?

A. Again, feasible, but not affordable. It's -- you know, it's more than ten times the cost to do a genome on a PacBio system --

THE COURT REPORTER: I'm sorry. Sir, I didn't hear the word. It's more than ten times the

cost to do a genome?

THE WITNESS: On a PacBio sequencer.

THE COURT REPORTER: I'm going to ask both of you to speak a little slower because it sounds a bit muffled. Thank you.

THE WITNESS: Okay.

08:54:38 MS. SCOTT: And just for the court
08:54:40 reporter's benefit, one of the companies we'll be
08:54:44 referring to is -- the shorthand is PacBio, which is
08:54:48 P-A-C-B-I-O, so I think in the last answer it would
08:54:54 have been PacBio sequencer. Great.
08:54:54 BY MS. SCOTT:
08:55:15 Q. Which Illumina sequencing systems are --
08:55:17 would you consider appropriate for whole genome
08:55:20 sequencing?
08:55:21 A. The -- the majority of the whole genomes
08:55:26 sequenced would be sequenced on either a HiSeq X10
08:55:31 platform or on our NovaSeq platform.
08:55:34 You can do it on NextSeq platforms, which
08:55:37 are our mid-throughput; but again, it's not as
08:55:40 affordable.
08:55:41 So if -- if there's any volume of
08:55:43 sequencing for whole genomes being done, it's
08:55:45 typically done on either our HiSeq X10 or on our
08:55:48 NovaSeq.

08:55:51 Q. And globally are there competitors of
08:55:55 Illumina that offer systems that are feasible for
08:56:01 use in sequencing whole genomes?
08:56:03 A. The -- the BGI/MGI is really the only
08:56:11 other affordable and -- and output -- higher output
08:56:19 system that would be used for whole genome
08:56:21 sequencing today.
08:56:22 Q. And currently in the United States, is the
08:56:35 Illumina high-throughput or mid-throughput system,
08:56:40 are they the only ones that are available for sale?
08:56:46 MR. McCLELLAN: Objection. Vague.
08:56:51 THE WITNESS: Yeah, I'm -- I'm not sure I
08:56:52 understand your question.
08:56:54 BY MS. SCOTT:
08:56:54 Q. Let me -- let me rephrase.
08:56:56 In 2019, was Illumina the only company on
08:57:06 the market in the United States offering sequencing
08:57:11 systems that were feasible for use in whole genome
08:57:18 sequencing?
08:57:19 A. So some people would try to do that with
08:57:26 Ion Torrent or with Pacific Biosciences if they had
08:57:31 that technology, even though it was expensive.
08:57:35 Many US customers would outsource, so they
08:57:38 would send samples to BGI/MGI -- I -- I don't know
08:57:43 how to refer to it today, but to -- to the BGI

08:57:45 group, we'll say, to have the whole genome
08:57:48 sequencing done -- done as a service. And then
08:57:51 Illumina was selling the high-end technologies in
08:57:54 the US.
08:57:55 So -- so they did have access to other
08:57:59 technologies or services for whole genome
08:58:01 sequencing.
08:58:02 Q. So -- just to make sure I understand,
08:58:09 so if -- so if a customer wanted to do whole genome
08:58:13 sequencing and they were in the United States, their
08:58:18 options would be to -- to send their samples out to
08:58:22 a service provider, to -- or to buy a [verbatim]
08:58:26 Illumina system, or to use one of the technologies
08:58:32 that we've talked about as being potentially
08:58:37 feasible, but not affordable; is that right?
08:58:40 A. Correct.
08:58:40 Q. So we got off to kind of a quick start. I
08:58:56 just -- I'll take a quick step back and -- to say
08:59:00 that I know many of us are calling in to -- or are
08:59:06 on videoconference from homes and other places. I
08:59:09 know, at least speaking for myself, I have children
08:59:14 around here somewhere and dogs and cats and all
08:59:16 sorts of those things.
08:59:17 So to the extent there's any -- any noise
08:59:20 or interruptions, I -- I hope we can be all

typically sell, you know, [redacted] to [redacted] of those a year in the US. We have a mid-throughput portfolio of NextSeq and NextSeq Dx's and different flavors of NextSeqs that we'll sell a [redacted] of a year. And we have NovaSeqs and HiSeqs that we typically sell, you know, [redacted] to [redacted] of a year in the United States.

BY MS. SCOTT:

Q. What is your understanding of how many NovaSeq systems Illumina expects to sell in 2020?

A. We expect to still sell more than [redacted] NovaSeq units globally in 2020.

Q. And how many of those [redacted] NovaSeq units would you expect to sell in the United States?

A. We typically do between 50 and 60 percent of our business in the United States. It's our largest market and by far, our largest individual country.

Q. And how many NextSeq systems do you expect to sell globally in 2020?

A. I would have to pull up the -- the actual number, but I'm going to ballpark it at [redacted] units, plus or minus [redacted]

THE COURT REPORTER: I'm sorry. How many units? Plus or minus how many units?

09:17:29 THE WITNESS: [redacted]

09:17:30 BY MS. SCOTT:

09:17:30 Q. And would that also be approximately 50 to 60 percent in the United States?

09:17:35

09:17:36 A. Yes, it would.

09:17:39 Q. Do you have a sense of what percent of Illumina's sequencing revenue is a result of sales in the United States?

09:17:54

09:17:59

09:18:00 A. Overall se- -- like -- like overall sequencing revenue?

09:18:11

09:18:12 Q. Yes.

09:18:13 A. It's, again, you know, probably closer to 60 percent than 50. But, you know, our business is -- is -- is big enough now that it's quite consistent, in terms of regional contributions.

09:18:18

09:18:22

09:18:24

09:18:45 Q. Do -- how do prices vary for the same system between different geographies?

09:18:48

09:18:53 A. The prices on our -- on our instruments are very consistent globally. Where -- where we see different prices is mostly on the consumables, so the -- the SBS consumables that run through those systems. And that's -- that's where, based on market segment or geographic segment, you will see price differences occur.

09:18:58

09:19:04

09:19:06

09:19:10

09:19:14

09:19:18

09:19:27 Q. When you refer to "market segment," what

09:19:29 does that mean?

09:19:31 A. So within a clinical market, I would

09:19:36 segment that to oncology, to reproductive health, or

09:19:42 genetic disease. But those are three different

09:19:47 segments we'll be selling to at different price

09:19:47 points with our consumables and clinical. And then

09:19:48 our research market or an agriculture market are

09:19:51 completely different from those clinical, again.

09:19:57 Q. Is there ever a situation where the

09:20:02 same -- essentially the -- the same consumable is

09:20:05 sold for a different price -- strike that.

09:20:11 Are -- are -- does Illumina offer

09:20:27 different levels of discounts between different

09:20:31 geographies?

09:20:32 A. Our dis- -- our discounts are quite

09:20:40 consistent, but our list prices may differ. And so

09:20:44 we have different regional price books that apply to

09:20:49 capture that geographical need. And then from that

09:20:53 different price book, we then apply a discounting

09:20:56 authority and -- and a -- and a volume discounting

09:21:00 matrix.

09:21:01 Q. So is it correct to say that the list

09:21:05 price for a NovaSeq in the United States would be

09:21:12 higher than a NovaSeq list price for China?

09:21:19 A. Actually, China, we have very consistent

because not everybody could not use our full six terabases of sequence, and so they wanted that flexibility in the NovaSeq. We've also been exploring read lengths and doing multi-read length --

THE COURT REPORTER: I'm sorry, we've been exploring -- we've been exploring read length?

THE WITNESS: Read length. Yeah.

BY MS. SCOTT:

Q. Is it correct that the NovaSeq uses patterned flow cells?

A. Correct.

Q. And is one of the advances in the NovaSeq flow cells that the -- that their patterning becomes more dense over time?

A. Yes. Density of -- of pattern flow cells is a mechanism to use to increase our output. And, in fact, on our recent NextSeq 2000 launch in January of 2020, so just this last January, you know, it was a density improvement on those flow cells that enabled us to -- to drive that technology forward for the next sequence.

Q. What -- I -- I'm sorry, I'm not sure I completely understand what you said.

So what was it about the density of the

09:28:49 flow cells that resulted in driving forward the
09:28:55 NextSeq -- the new NextSeq launch?
09:28:57 A. Yeah. Tighter pitch of those patterns --
09:29:00 of the patterns on the flow cells. So more -- more
09:29:02 clusters per flow cell, or more clusters per -- per
09:29:07 square millimeter on those flow cells. It helps us
09:29:11 to miniaturize, which helps us to go faster. It
09:29:15 helps us to reduce cost.
09:29:19 Q. When did Illumina first start offering
09:29:21 pattern flow cells?
09:29:25 A. It would have been one of our HiSeq family
09:29:35 systems, either the HiSeq 4000 or the HiSeq X Ten,
09:29:43 which would have been launched in 2014, I think,
09:29:45 2000- -- between 2012 to 2014. You'll have to check
09:29:50 some of the documents. Sorry.
09:29:55 Q. Okay.
09:29:55 A. I've been at Illumina a long time.
09:30:04 Q. Is another advance in the sequencing
09:30:12 process that Illumina has used with some of its
09:30:16 newer systems to use two-color chemistry?
09:30:22 MR. McCLELLAN: Objection. This is out --
09:30:25 sorry. Objection. Outside the scope of the
09:30:29 declaration.
09:30:29 THE WITNESS: Yeah. What I will say is
09:30:31 there's a lot of confusion. It's two channels of

09:30:35 chemistry. And so we use two channels for imaging.
09:30:38 It's not two dye. And -- and so, you know, I think
09:30:41 it's important to differentiate number of channels
09:30:44 from the number of dyes, And we use multiple dyes in
09:30:56 all of our SBS chemistries.
09:30:58 BY MS. SCOTT:
09:30:58 Q. And when you say that you "use multiple
09:31:01 dyes," are you referring to -- are some of those
09:31:06 dyes of the same color?
09:31:07 A. Yes. Where we use multiple green or
09:31:12 multiple red dyes in a green/red two-channel SBS
09:31:20 chemistry.
09:31:20 Q. And is there also a blue/green chemistry?
09:31:24 A. There is. We just released that in
09:31:26 January, with the recently launched NextSeq 2000.
09:31:36 Q. So the newest currently release of --
09:31:42 THE COURT REPORTER: I'm sorry. Counsel,
09:31:44 I can't hear you.
09:31:46 MS. SCOTT: Sorry. I'll -- I'll start
09:31:47 over.
09:31:48 BY MS. SCOTT:
09:31:48 Q. So it's correct to say that the most
09:31:50 recently released mid-throughput sequencer of
09:31:54 Illumina uses two-channel chemistry?
09:31:56 A. Two-channel blue/green chemistry.

09:32:01 Q. And it also uses pattern flow cells;
09:32:07 correct?
09:32:07 A. It does.
09:32:07 Q. Do you have an understanding of
09:32:20 defendants -- the difference between defendants'
09:32:22 StandardMPS reagents and CoolMPS reagents?
09:32:28 A. I've -- I've looked schematically at it.
09:32:32 I haven't seen data on the differences, but I have
09:32:35 looked schematically at the differences of how you
09:32:40 introduce the label.
09:32:41 Q. Which -- I -- well, before I ask the
09:32:45 question --
09:32:45 MS. SCOTT: Just for the benefit of the
09:32:47 court reporter, we're going to be talking a lot
09:32:50 about two different types of chemistries. One is
09:32:54 called StandardMPS, which is the word "standard,"
09:32:58 and then no space, and then the letters --
09:33:01 capitalized letter MPS?
09:33:07 And then the second one is CoolMPS, also
09:33:17 with no space.
09:33:17 BY MS. SCOTT:
09:33:28 Q. So what, in your understanding, is the
09:33:31 difference between defendant's StandardMPS and
09:33:42 CoolMPS reagents?
09:33:43 A. So "Standard" being -- you know, they're

10:11:02 specific segments.

10:11:04 Q. And within the clinical segment, are

10:11:12 any of -- or within the clinical segment, what

10:11:14 percentage of customers would use high-throughput

10:11:20 sequencers?

10:11:25 A. It depends on the maturity of that

10:11:28 segment. And -- and what we see in the clinic is

10:11:32 that testing is very specialized and much more

10:11:36 centralized early on. And over time as more

10:11:44 hospitals and more physicians start to order those

10:11:47 tests, the need for decentralized testing

10:11:50 environment prevails.

10:11:51 And so most of our segments are still very

10:11:54 centralized in the clinic; and so it's, you know,

10:11:57 handfuls of customers that are offering these tests,

10:12:00 not -- not every hospital pathology lab that's

10:12:04 offering it.

10:12:05 And that's why we have such an opportunity

10:12:07 for growth, because right now, it is very early and

10:12:11 very centralized. And it will, over the next three

10:12:13 to five years, grow into the hospital setting and be

10:12:17 much more decentralized testing.

10:12:19 Q. For the clinical market, do those

10:12:36 sequencing systems require regulatory approval?

10:12:40 A. Every country has their own regulatory

10:12:47 environment that -- that we work with. Here in the
10:12:49 United States, lab developed tests are the most
10:12:54 common approached for early clinical tests.
10:12:57 And so as long as that lab has its proper
10:13:01 certifications, you know, clear kept proper
10:13:11 certifications, they can validate and create their
10:13:11 own lab-developed tests using our technologies.
10:13:14 In other parts of the world, we absolutely
10:13:16 have to go and get regulatory cleared systems, you
10:13:18 know, whether that's a CE-IVD or in China an NNPA
10:13:21 regulation of those. So we work with each of those
10:13:24 countries to get the proper regulatory approvals for
10:13:31 -- for our products.
10:13:32 Q. So for a new product in the United States,
10:13:37 in terms of going from having a sort of sequencer
10:13:42 that's, you know, ready to be sold, but then taking
10:13:45 it from, you know, just being able to be sold for
10:13:48 research use, then being able to market it for a
10:13:52 clinical application, could you describe what the
10:13:55 process is to get to that point where you could
10:13:58 market it for clinical application?
10:13:59 A. Yeah, right now we -- we have the MiSeqDX
10:14:09 that, you know, we've taken through the US FDA. And
10:14:12 we put that through years ago with a full work flow
10:14:16 in the round of cystic fibrosis panels. And this

10:14:20 was three to five years after the RUO version of
10:14:25 MiSeq was launched.
10:14:27 We've similarly been taking through the
10:14:30 NextSeq as a NextSeq DX. And, again, it's typically
10:14:33 a three- to five-year lag behind -- in an RUO
10:14:36 product because of all of the documentation and
10:14:39 design controls and work flows; but also because
10:14:43 once it's submitted and you've got that cleared
10:14:47 device, the change control around that becomes much
10:14:50 more onerous. And so you want to make sure that the
10:14:53 system is hardened and the chemistries are hardened
10:14:56 and that work flow isn't going to undergo ongoing
10:15:00 changes that a research environment will have --
10:15:02 accept.
10:15:02 And so it typically takes us three to five
10:15:06 years before submitting for a -- a regulatory
10:15:09 cleared device after going out to market in a
10:15:17 research setting.
10:15:20 THE COURT REPORTER: In the what setting?
10:15:22 I'm sorry?
10:15:22 THE WITNESS: Research setting. Research.
10:15:24 BY MS. SCOTT:
10:15:24 Q. And for the MiSeqDX, was it initially
10:15:32 approved in countries outside the US for clinical
10:15:38 use?

10:15:38 A. My understanding is the MiSeq we first did
10:15:43 in the US as the MiSeqDX with the cystic fibrosis
10:15:48 panel. The NextSeq DX, however, we first went for a
10:15:50 CE-IVD mark with NIPT work flow for the NextSeq DX.
10:16:00 And so it was CE-IVD cleared --
10:16:00 THE COURT REPORTER: Can you slow down
10:16:00 with the letters, please. Thank you.
10:16:02 THE WITNESS: So the NextSeq DX was CE-IVD
10:16:08 cleared before we took that back into the U.S. FDA
10:16:12 submission.
10:16:14 BY MS. SCOTT:
10:16:14 Q. And how long was it between the original
10:16:22 NextSeq launch and getting the CE-IVD clearance?
10:16:29 A. Three to five years is my guess.
10:16:45 Q. If the defendants were to launch their
10:16:48 sequencing products in the United States and wanted
10:16:53 to seek clinical approval, is there any reason that
10:16:59 you think it would be faster for them than the three
10:17:04 to five years that Illumina's experienced?
10:17:09 A. They wouldn't need U.S. FDA approval to
10:17:14 bring it into the U.S. for clinical use because of
10:17:17 the LDT environment within the United States. So
10:17:20 they would be able to immediately let labs validate
10:17:24 their own work flows on a research system in the
10:17:27 United States. So they would have an opportunity

10:17:31 right away to go into these clinical market
10:17:31 opportunities.
10:17:34 They would be faster than the three to
10:17:38 five years because they already have clearance in
10:17:40 China and they already have CE-IVD clearance in some
10:17:47 parts of -- of Europe. And so the documentation and
10:17:49 the portfolio that would be required for U.S. FDA
10:17:52 submission was more advanced than starting from zero
10:17:56 in the U.S.
10:18:03 MS. SCOTT: I think I lost the realtime.
10:18:13 MR. McCLELLAN: Mine's still working.
10:18:18 THE COURT REPORTER: Counsel, would you
10:18:22 like to go off the record?
10:18:23 MS. SCOTT: Yes, let's go off the record.
10:18:26 THE VIDEOGRAPHER: We are going off the
10:18:27 record at 10:18 a.m. Pacific Standard Time.
10:19:49 (Short recess taken.)
10:20:09 THE VIDEOGRAPHER: We are back on the
10:20:15 record at 10:20 a.m. Pacific Standard Time.
10:20:21 BY MS. SCOTT:
10:20:23 Q. So in thinking about the clinical market
10:20:26 in the United States, what is your understanding for
10:20:32 how long it would take for the Defendants to be able
10:20:39 to get approval to be able to offer diagnostic tests
10:20:46 in the U.S.?

10:36:40 U.S.?

10:36:40 A. It's really too hard for us to do because there are so many different aspects to this that are unpredictable for us right now. So, you know, it's not just the lost sales at lower prices or the lost sales because of lower prices at those accounts, it's a market expectation that it changes.

10:37:03 We're so early in the market that with these growth rates and -- and the way the business is -- is, you know, growing in the U.S., it's hard to understand what that market is -- dynamic is going to look with -- with them having come in and -- and undercut both pricing. You know, the customers' relationships that I talked about earlier are so critical with Illumina. You know, the damage to customer relationships makes it hard for -- for us to predict it.

10:37:31 So -- so no, we -- we have not been able to quantify what that overall damage would be because of this -- this price -- price cutting.

10:37:41 Q. Has Illumina done anything to try to quantify it?

10:37:48 A. Not that I've seen.

10:37:48 Q. Does Illumina have any current plans to reduce its prices if Defendants were to launch their

products?

A. We don't have a current plan for it. We're always lowering prices. That's -- that's how we've been successful in driving the market. That's why we've launched various platforms. That's why we're continuing to innovate our technology. But it's, you know, the timing with the market at appropriates points in time when the market can absorb that, not -- not a destructive approach to other technologies or to our own technologies prematurely.

Q. And when you say you're always lowering prices, is that because in a sense, you're making the products -- you're changing the products and making them more efficient or is it a matter of for the same product, you're just lowering the price or providing a further discount?

A. It can be both. For the most part, it's by launching new innovations. A great example is our NextSeq 2000 that we just launched. It's to replace our NextSeq 550 in that mid part of our portfolio and its operating cost is -- is about half of the operating cost of the next five -- NextSeq 550. Because we've improved our chemistries, we've miniaturized everything within it

10:39:19 and we've been able to reduce our cost.

10:39:22 So most of these cost reductions are to

10:39:25 the big parts of the market segment, where we've

10:39:28 been able to innovate to make it worth it. That

10:39:30 being said, we can always make modifications to

10:39:34 pricing on existing on-market prices as well. We

10:39:36 just tend not to do that as regularly as we try to

10:39:40 introduce new innovations into the market.

10:39:47 Q. And isn't it also the case that in some

10:39:49 cases, Illumina does things with the intention of

10:39:56 increasing the average sales price of a product?

10:40:01 MR. McCLELLAN: Objection. Vague.

10:40:02 THE WITNESS: We have -- we have an annual

10:40:09 price change. We used to do that on April 1st. We

10:40:14 now do that in the middle of February. And we

10:40:19 typically have, on average, around a 3 percent price

10:40:22 increase, which is consistent with the way we see

10:40:26 inflation. So we do have annual price changes.

10:40:30 They tend to -- to gradually go up.

10:40:32 BY MS. SCOTT:

10:40:33 Q. So for a given product, the annual price

10:40:36 would be increasing. But there are times when you

10:40:42 introduce a new product, that whether it's -- it has

10:40:45 lower cost or -- or whatnot, and that results in the

10:40:49 ability to offer a lower price; is that right?

10:40:53 A. For the most part, yes. There are certain
10:40:57 product lines that we don't do annual price
10:40:59 increases on. And those have included those that
10:41:03 are most likely to be used for whole genome
10:41:08 sequencing because that is the most price sensitive
10:41:11 application we have. And so for our HiSeq X Ten, we
10:41:11 never did annual price increases.
10:41:17 For our NovaSeq S4 flow cells, we either
10:41:19 don't do or we do very tiny annual price increases,
10:41:23 compared to our other product lines. So it gives us
10:41:26 the opportunity to strategically prices things based
10:41:31 on the application and -- and the market acceptance
10:41:33 of a price change.
10:41:41 Q. Does Illumina ever offer short-term
10:41:45 promotions on its products?
10:41:47 A. We have on occasion, yes.
10:41:52 Q. Can you give me a couple of examples of
10:42:01 some short-term promotions that have been offered?
10:42:05 A. We're offering a 50 percent discount on
10:42:07 some library prep kits right now for anybody that
10:42:11 needs to use those for COVID-19 testing to help.
10:42:17 But that will stop at the end of this year, unless
10:42:23 COVID-19 continues. We have, on occasion, offered
10:42:26 entry-level promotions on software and storage and
10:42:29 computer. Promotional practices are -- are very

10:42:37 common in commercial organizations. But they're
10:42:40 promotions because they're for a limited time period
10:42:42 and not a complete reset of a price point.
10:42:44 Q. Hopefully my microphone isn't picking up
10:43:19 the flock of turkeys that is going down the side of
10:43:22 the hill by my house. They're quite annoying. I
10:43:26 will say that. So hopefully you-all can't hear
10:43:30 them. So let's see. Let's move on.
10:43:50 Would you agree that the expansion of
10:43:57 affordable whole genome sequencing is required for
10:44:08 the rapid expansion of precision medicine?
10:44:13 MR. McCLELLAN: Objection. Vague.
10:44:15 THE WITNESS: I don't believe that just
10:44:23 the cost of the whole genome sequencing today is
10:44:30 limiting the adoption of whole genome sequencing or
10:44:34 precision medicine. Illumina's price point today is
10:44:38 more than enabling for these applications. There's
10:44:43 no need to lower it further to drive rapid
10:44:47 expansion. We need -- we need clinicians and
10:44:54 oncologists and OB/Gyns and payers and
10:44:58 reimbursement. The market does not need genomes
10:45:02 today to drive proper precision medicine.
10:45:19 BY MS. SCOTT:
10:45:19 Q. Would you agree that price of whole genome
10:45:23 sequencing is one limiting factor?

11:49:11 If Illumina had a change to its reputation
11:49:29 but it had no change in sales, how would that harm
11:49:37 it?
11:49:44 MR. McCLELLAN: Objection. Incomplete
11:49:45 hypothetical.
11:49:52 BY MS. SCOTT:
11:49:52 Q. So --
11:49:52 A. Yeah, I have a hard time believing that
11:49:55 your reputation is -- is changed without it
11:50:01 impacting sales as customer -- customer experience,
11:50:06 the customer relationships are critical to ongoing
11:50:10 business. And so I have a hard time disassociating
11:50:17 those to answer your question.
11:50:19 Q. So as a -- would you agree that Illumina's
11:50:41 customers of high-throughput sequencing systems are
11:50:49 typically sophisticated institutions?
11:50:52 A. Yes.
11:50:55 Q. And in order to acquire Illumina's
11:51:00 high-throughput sequencing systems, they require a
11:51:04 substantial investment; correct?
11:51:07 A. Correct. Our NovaSeq 6000 platform is a
11:51:13 list price of a little over 900,000 U.S. dollars.
11:51:26 Q. Would you agree that the primary concern
11:51:29 of a high-throughput sequencing customer is whether
11:51:33 or not the -- the sequencer is able to meet their

applications become easier for less sophisticated labs to run.

Q. And some customers who currently cannot afford to purchase DNA sequencing systems for in-house use will send their samples out for sequencing as a service; correct?

A. Correct. That is an alternative for people without the capital budgets or without the volumes.

Q. Would you agree that in markets outside of the United States, where there are multiple -- multiple providers of sequencing technology at the high-throughput level, that Illumina competes on both product features and price?

A. Yes. Our best example of that would be within the China market, where we push much harder on the product features than the price because, again, our -- our pricing practices don't allow us to go as deep into the price points as necessary. And so it's products and/or the way we deploy through partnerships in China that is unique to how we have to do business in the rest of the world.

Q. So how is -- how is it different -- how is it different in China versus the rest of the world?

A. How was what different?

03:37:05 A. Low magnitude of what?
03:37:12 Q. Well, so for example, if Defendants were
03:37:15 to sell one sequencer and, you know, reagent kits
03:37:24 for that sequencer this year in -- in the United
03:37:27 States and nothing else, would you consider that to
03:37:30 be a substantial harm to Illumina?
03:37:35 MR. McCLELLAN: Objection. Incomplete
03:37:37 hypothetical.
03:37:41 THE WITNESS: I do. I think any sequencer
03:37:42 in the United States becomes a major threat and a
03:37:46 major challenge for me. You know, especially at
03:37:51 price points that are, you know, 50 percent of what
03:37:54 Illumina charges, it resets the expectations of the
03:37:57 entire market, it makes others feel like this
03:38:02 technology can come into the U.S., when right now,
03:38:04 most of them will say, you know, Illumina --
03:38:06 Illumina's IP is -- is of strength in the United
03:38:10 States, and it will cause a complete shift in -- in
03:38:13 my market and customer perception of what's
03:38:16 happening in -- in sequencing.
03:38:18 BY MS. SCOTT:
03:38:20 Q. So -- so what I want to understand,
03:38:22 though, because I -- I think the way you're --
03:38:25 you're looking at this is, if there's one, then
03:38:29 there's more, and then there will be more harm.

03:38:34 So what I want to understand is, if
03:38:36 there's one customer or one sequencer or five
03:38:41 sequencers or ten sequencers or a hundred
03:38:46 sequencers, I would -- I would think that those
03:38:49 would be different -- a different magnitude of harm
03:38:53 to Illumina.
03:38:56 Would you agree with that?
03:38:58 MR. McCLELLAN: Objection. Form and asked
03:39:01 and answered.
03:39:01 THE WITNESS: Yeah, I do. And I -- I do
03:39:05 believe that it's -- it's -- it's just as harmful
03:39:08 and will create a future challenges. And we've seen
03:39:11 this specifically happen, I believe it was in
03:39:14 Sweden. You know, BGI put a system into a lab in
03:39:19 Sweden and was cited as it's just one sequencer.
03:39:22 That same lab now has four or five different MGI
03:39:27 systems and they're building an institutional
03:39:30 capability around it.
03:39:32 Now, we're seeing the same thing start to
03:39:33 play out now in Germany, where it's coming in
03:39:34 through different BGI Group entities. So yes, one
03:39:38 sequencer completely changes a market dynamic and
03:39:41 other country's expectations of what they'll have
03:39:44 access to and how those scientists will try to use
03:39:47 them.

03:39:55 BY MS. SCOTT:

03:39:55 Q. Let me ask you a different question.

03:39:57 If MGI were to only sell sequencers to customers who are currently using sequencing as a service, would you see that as a substantial harm to Illumina?

03:40:22 MR. McCLELLAN: Objection. Incomplete hypothetical.

03:40:24 THE WITNESS: Any use of SBS technologies and using our investments and R&D into this to undercut our prices, to me, is going to create substantial harm, whether it's through services or through products.

03:41:10 BY MS. SCOTT:

03:41:10 Q. Is there any degree of revenue that Defendants could earn from sequencing products in the United States that you would feel is insufficient to be considered substantial harm to Illumina?

03:41:36 A. No.

03:41:37 Q. And is it -- in your view, is a KOL at a university doing a free trial of a Defendants' sequencer, that in and of itself would cause substantial harm to Illumina?

03:42:31 A. Absolutely. You know, KOLs by definition

pipeline. A normal instrument sales cycle for me is between nine and twelve months. And so the majority of what will be impacted is always nine to twelve months out, as people secure the funding and the projects for it.

And so the lookback is only going to capture a subset of the true dynamic that we're facing and the -- the expectation in the market that we're going to be facing on price pressures that are even outside of those specific transactions. So -- so what you're asking me to do is look at a very narrow scope of lost revenues that will fail to capture the overall market dynamic shift, reputational shift, and -- and future market loss through opportunities.

Q. And if you -- but if you wanted to look at, say, for example, alleged price erosion, you would, at least as a starting point, be able to look at the average sales price that was projected before the Defendants's announcement, versus what the average sales price was either at the end of the year or some -- at some point in the future, you know, if you need more time to get through that sales cycle?

A. It completely changes the dynamic. I'm

03:49:22 not -- I'm not going to be able to quantify it for
03:49:24 you and you're not going to get me to -- to -- to
03:49:24 try to quantify it for you here. You know, this --
03:49:31 this is a very dynamic, fast moving market. It's
03:49:36 based on customer relationships and -- and customer
03:49:40 loyalty. And -- and I cannot predict how that's
03:49:43 going to be played out over the course of this year
03:49:46 or the next ten years, if -- if this was to be
03:49:48 allowed.
03:49:51 Q. You would agree, though, that if someone
03:49:52 were to want to do that analysis or to try to do
03:49:57 that analysis, that you would have the data to be
03:50:04 able to -- to perform that analysis; right?
03:50:10 MR. McCLELLAN: Objection.
03:50:11 Mischaracterizes prior testimony.
03:50:12 THE WITNESS: I don't believe we would
03:50:16 have the data. I think we would have transactional
03:50:20 data to look at ASP changes or specific lost sales.
03:50:25 But to attribute those to -- to one
03:50:29 competitor or to one market shift is a very, very
03:50:35 difficult thing to do. And so I don't think that
03:50:37 you'll ever be able to get an accurate
03:50:41 representation of that or -- or the impact it's
03:50:43 going to have on the future.
03:50:44 BY MS. SCOTT:

03:50:48 Q. Okay.

03:51:06 MS. SCOTT: Can we just check how long we've been on the record?

03:51:12 THE COURT REPORTER: Dave?

03:51:12 THE VIDEOGRAPHER: Yes, stand by.

03:51:23 Five hours and 31 minutes.

03:51:27 MS. SCOTT: Thank you.

03:51:35 BY MS. SCOTT:

03:51:35 Q. Okay. Let's -- let's talk a little bit more about the contracting process for consumables, in particular.

03:51:46 Does -- are there -- I don't know. Is there a term to those consumable agreements?

03:51:57 A. There are different types of agreements that we enter into with customers. Most commonly, we just have an annual price agreement. And so they can order off that as they need to, just knowing what their price is going to be for that -- for that year. And, again, in -- and right now, that runs from middle of February to the middle of February the following year.

03:52:30 We also, outside of just sort of a customer price like that, and we have standing agreements and those are typically one year, but can be as long as three-year standing agreements. And

for those, they're usually the larger customers where they will give us a large purchase order with a ship schedule and those products will ship either weekly or monthly or bimonthly, whatever -- whatever that customer needs in over the courser of that agreement timeframe.

And then we also, mostly for clinical labs, enter into much more detailed supply agreement contracts. And those supply agreements will -- will take into different considerations and -- and be a more detailed set of -- set of supply and audit rights for those customers so, you know, we have fewer of those, but those are usually a three-year agreement because they're a little bit more complicated. And so we tend to enter into those supply agreements with -- with larger clinical labs to ensure continuity of supply. And that's really their request to ensure continuity of supply.

Q. And do you have a sense for what percentage of the consumable revenue falls under those three buckets of different types of agreements?

A. I don't.

Q. And do -- do the -- the customers that are generally the high-throughput NovaSeq customers, are

those mostly going to be in the standing agreement category?

A. Yeah. Those are usually annual standing agreements. And that's where we will use our pricing to determine the magnitude of what they're willing to commit to for that 12 months, as evidenced also then by ship schedules over that 12 months to secure the different discounts.

Somebody just got attacked by some dogs.

MS. SCOTT: I understand. I've been trying to keep mine out of this room. He only got in once.

BY MS. SCOTT:

Q. Okay. So -- okay.

So for the standing agreements, did you say those were February to February cycle?

A. Yeah. We've gone to mid -- February 14th or 15th, a mid-February annual cycle on those standing agreements.

Q. Okay. And the -- so the price that's associated with the standing agreement, is that based on a particular volume commitment?

A. Correct. So --

Q. Well --

A. So we usually -- so just to be clear, we

03:55:18 use the prior year as a starting point -- as a
03:55:22 discussion with those customers, to talk about their
03:55:25 volumes increasing or decreasing so that we can
03:55:29 establish the next year. But if it's wildly
03:55:32 different than the prior year, then we're unlikely
03:55:34 to enter into a full 12-month commitment because
03:55:37 customers will often try to overcommit to volume to
03:55:41 get bigger discounts, as you might imagine.
03:55:43 So it -- it generally is a -- is an
03:55:45 increase over prior year as the market increases,
03:55:48 but -- but, you know, not -- not a dramatic change,
03:55:52 unless something -- something's happening with that
03:55:53 customer that we're aware of.
03:56:02 Q. About -- do you have a sense for how many
03:56:48 customers fall into this bucket of having standing
03:56:54 agreements?
03:56:59 A. Probably in the [redacted] to [redacted] customer range.
03:57:03 There's -- it's -- it's a very busy time of sliding
03:57:07 off on things, between the new year and the middle
03:57:09 of February for me.
03:57:10 Q. Okay. Are -- are you aware of a situation
03:57:57 involving the University of Toronto trying to
03:58:03 purchase a sequencer from MGI?
03:58:07 A. I don't know all the specifics, but I know
03:58:13 that, you know, University of Toronto was one of the

04:33:55 A. Okay.

04:34:30 Q. Okay. And this slide that ends in '304 is titled "Differentiators." And on the left there is a series of different categories, and then there's a column for Illumina and a column for BGI and then a recommendation.

04:34:49 Do you see that?

04:34:49 A. Yes.

04:34:52 Q. And if you look at the first line, it's output/throughput, and both Illumina and BGI have three stars and the recommendation is no differentiation.

04:35:24 Do you have an understanding of what that means?

04:35:27 A. That the output and throughput are very similar in the technologies as we see them today.

04:35:34 Q. If you go down to T-A-T, what does "TAT" stand for?

04:35:47 A. Turnaround time. That speaks to the length of time from putting a sample on a sequencer to getting data off a sequencer.

04:35:57 And turnaround time is important to think of as not just one versus two days or the sequencing time that you mentioned. But as we discussed earlier, we've done a lot to embed real-time

to do into development.

This doesn't translate into an external document, which is why I haven't seen it or we wouldn't put this in front of our team.

But I would say that the T7 announcement was not that long ago, and the first customer shipments were just recent. So it's really hard for us to give three stars on reliability or operations maturity when it's a brand-new platform that's being launched, and we haven't seen enough of them in the wild to know what they will perform like.

Q. And would you agree that the Defendants' lack of sales history in the U.S. will be, at least by some degree of an impediment to them, being successful in the U.S. market [verbatim]?

A. I don't understand where you're going. I don't believe they should be selling in the United States, period, so I -- so of course still have an impediment to success in the United States if they're not selling in the United States.

Q. Fair enough. Okay. So if they were selling in the United States and -- or -- well, actually I'll rephrase the question.

If the Defendants were to begin selling in the United States, do you think that them not having

a -- essentially a -- a track record within the U.S. would be an impediment to them gaining traction in the market?

A. No. They have more than --

THE COURT REPORTER: I'm sorry. Mark, "Answer: No. They have more than," and I didn't hear you because it -- there was cutoff.

THE WITNESS: They have more than 460 global customers and more than 1600 systems. They have proven their technology and don't need to continue to try to prove that technology to enter any market.

BY MS. SCOTT:

Q. Isn't it true that that is one of the arguments that is made to customers to try to convince them not to buy from the Defendants or their affiliates?

A. What specifically is the argument?

Q. That they -- well, let me just go back to the slide to get the right language.

So specifically reliability and operations maturity. So isn't the -- isn't it true that Illumina uses the sort of untested nature or -- or it would say it's questionable reliability of the Defendants' products as an argument to customers to

04:54:03 So the team that was working on that
04:54:06 acquisition plan and running all of the work streams
04:54:10 around the integration planning was directly
04:54:13 reporting to me for -- from January till November of
04:54:17 2019.
04:54:20 Q. And what's your understanding of why the
04:54:24 PacBio acquisition didn't go through?
04:54:27 MR. McCLELLAN: Objection. Calls for a
04:54:28 legal conclusion.
04:54:30 THE WITNESS: Yeah, we obviously had
04:54:35 the -- the filings from both the CMA in the UK and
04:54:39 the FTC here in the U.S., with some of their
04:54:43 challenges with that. And so, you know, in -- in
04:54:46 face of their positions on that, we stopped the
04:54:49 acquisition attempt.
04:54:52 BY MS. SCOTT:
04:54:54 Q. Have you read the complaint by the FTC
04:55:00 challenging the acquisition?
04:55:02 A. I've seen some of the highlights. I
04:55:06 didn't -- didn't read the entire complaint.
04:55:09 Q. Are you aware that the FTC referred to
04:55:13 Illumina as a monopolist?
04:55:15 A. I am.
04:55:16 MR. McCLELLAN: Object -- objection.
04:55:19 Form.

advisement, and we'll respond to you on it.

And -- give me one second. I don't think we're going to have any questions, but let's just take a one-minute break. Just -- just hang up and stand by for one second.

MS. SCOTT: Okay.

THE COURT REPORTER: Dave, off the record, please.

THE VIDEOGRAPHER: We are going off the record at 5:06 p.m. Pacific Standard Time.

(Short recess taken.)

THE VIDEOGRAPHER: We are back on the record at 5:07 p.m. Pacific Standard Time.

MR. McCLELLAN: No questions from me at this time, so the deposition is concluded. Thank you, everyone.

We can go off the record.

THE VIDEOGRAPHER: Okay. One second.

This concludes today's proceedings in the deposition of Mark Van Oene. Total number of media units was ten.

We are off the record at 5:08, Pacific Standard Time.

(Proceedings concluded, 5:08 p.m.)

****

JURAT

I, MARK VAN OENE, do hereby certify under penalty of perjury that I have read the foregoing transcript of my deposition taken on Thursday, 04/09/2020; that I have made such corrections as appear noted herein in ink, initialed by me; that my testimony as contained herein, as corrected, is true and correct.

Dated this _____ day of _____,
2020, at _____,
California.

_____

MARK VAN OENE

CERTIFICATE OF REPORTER

I, Hanna Kim, a Certified Shorthand Reporter, do hereby certify:

That prior to being examined, the witness in the foregoing proceedings was by me duly sworn to testify to the truth, the whole truth, and nothing but the truth;

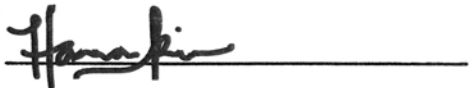
That said proceedings were taken before me at the time and place therein set forth and were taken down by me in shorthand and thereafter transcribed into typewriting under my direction and supervision;

I further certify that I am neither counsel for, nor related to, any party to said proceedings, not in anywise interested in the outcome thereof.

Further, that if the foregoing pertains to the original transcript of a deposition in a federal case, before completion of the proceedings, review of the transcript [ ] was [ ] was not requested.

In witness whereof, I have hereunto subscribed my name.

Dated: 10th day of April, 2020



Hanna Kim

ERRATA SHEET FOR THE TRANSCRIPT OF:

Case Name: ILLUMINA, ET AL. vs. BGI, MGI, ET AL.

Dep. Date: 04/09/2020

Deponent: MARK VAN OENE

CORRECTIONS:

Pg.	Ln.	Now Reads	Should Read	Reason
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________
___	___	___________	___________	___________

Pg.	Ln.	Now Reads	Should Read	Reason

Pg.	Ln.	Now Reads	Should Read	Reason
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____
___	___	_____	_____	_____

_____

MARK VAN OENE

SUBSCRIBED AND SWORN BEFORE ME

THIS____DAY OF_____, 2020.

_____

(Notary Public) MY COMMISSION

EXPIRES:_____